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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,870	01/10/2002	Sumit Verma	BEAR-P025	1117

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WAGNER, MURABITO & HAO LLP
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EXAMINER

PALADINI, ALBERT WILLIAM

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/045,870

Applicant(s)

VERMA ET AL.

Examiner

Albert W. Paladini

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Figure 1, which explains the basic claimed methodology of the invention, does not appear to be self-consistent with the instruments and measuring scheme depicted in figure 3. The "receiver impulse response" is measured in block 105 of figure 1. As explained, with respect to figure 3, the "receiver impulse" is the output of digital optical receiver 225, and is measured by sampling scope 235. On page 6, it states, "In step 110, a transmitted 'pulse' incident on the receiver is estimated." From figure 3, the pulse incident on optical receiver 225 is the output of optical attenuator 220, so that it is known and does not have to be estimated.

In addition, page 8 explains how the convolution integral (2) is used to estimate the "transmitted pulse incident on the receiver". The convolution integral is normally used for the inverse transformation of the product of two functions of s in terms of the inverse transforms of the individual functions, and is also used to evaluate the response

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of a linear system in terms of its response to a unit impulse. It is not understood how it may be used to determine the pulse incident on the receiver from optical attenuator 220.

Appropriate correction and clarification is required.

3. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recite "creating an output pulse waveform by convolving a receiver impulse response and an input pulse." However, On page 6, it states, "In step 110, a transmitted 'pulse' incident on the receiver is estimated." Thus, the specification describes how a pulse incident on the receiver is created and not an output pulse. The pulse incident on the receiver 225 is shown in figure 3 as the output of optical attenuator 220.

Appropriate correction and clarification is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

Lines 2-3 recite “creating an output pulse wave form by convolving a receiver impulse response and an input pulse”. From the specification, the “receiver impulse response” is the output of the receiver. Since an input pulse would be incident upon the receiver, the pulses could not be convolved. There is no step which recites where this “input pulse” is generated.

Lines 4-5 recite “generating an eye diagram by repeatedly overlaying the output pulse waveform every bit period.” The claim does not recite what the waveform is to be overlaid with.

Claim 8

Lines 2-3 recite “creating a first output pulse wave form by convolving a first receiver impulse response and a first input pulse”. From the specification, the “receiver impulse response” is the output of the receiver. Since an input pulse would be incident upon the receiver, the pulses could not be convolved. There is no step which recites where this “input pulse” is generated.

Appropriate correction and clarification is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Couch (4475210).

The limitation of "convolving" was not addressed, as it was not understood as explained in paragraphs 1 through 6.

On lines 54 through 61 in column 1, Couch discloses using a data eye monitor to characterize an optical receiver.

On lines 5 through 41 in column 3, Couch teaches the fact that an eye diagram constitutes the eye monitor.

On lines 9-16 in column 1, Couch discloses the use of the eye diagram by overlaying traces on an oscilloscope to produce a shape resembling a partially closed eye.

Relevant Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Magill (5056101) discloses a system and method for mode partition screening which includes sending side mode light to an optical receiver, using eye diagram mapping to collect an ensemble of different error rates, and estimating the maximum error floor of a laser under test by convolving the partitioning distribution with the optical receiver noise characteristics.

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Roberts (6229633) discloses an optical sampling technique in which an optical data signal is transmitted to an optical receiver, where the output of the low frequency optical to electrical converter is the convolution of the power in this pulse with its impulse response. Roberts also teaches the use of eye diagram measurements for sampling optical signals.

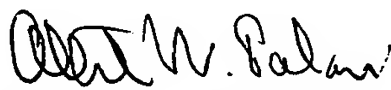
Bergamo (6574268) discloses the use of orthogonal codes for optical communication for the case where an optical receiver processes signals, where the data sequence transmitted by a transmitter is convolved with the impulse response of the channel between the transmitter and the optical receiver.

9. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (571) 272-3748. The examiner can normally be reached from 7:00 to 3:00 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (571) 272-3749. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

July 18, 2005


Albert W. Paladini
Primary Examiner
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